REMARKS

In an Office Action dated November 16, 2005, the Examiner rejected claims 1-10, 12-14, 17-19, 23, 28-31, 36-39, and 41-45 under 35 U.S.C. §103(a) as being unpatentable over Schmutz (U.S. patent application publication no. 2001/0031621) in view of Durrant et al. (U.S. patent no. 6,501,955, hereinafter referred to as "Durrant") and further in view of Nakatsugawa (U.S. patent application publication no. 2001/0014586). The Examiner rejected claims 20-22, 24, 34, and 35 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and Nakatsugawa and further in view of Periyalwar et al. (U.S. patent application publication no. 2004/0192204), rejected claims 32 and 33 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and Nakatsugawa and further in view of Dinkins (U.S. patent no. 5,633,876), and rejected claim 40 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and Nakatsugawa and further in view of Argyroudis (U.S. patent no. 5,892,758). The rejections and objections are traversed and reconsideration is hereby respectfully requested.

The Examiner rejected claims 1-10, 12-14, 17-19, 23, 28-31, 36-39, and 41-45 under 35 U.S.C. §103(a) as being unpatentable over Schmutz in view of Durrant and further in view of Nakatsugawa. Claim 1 has been amended to clarify the claim, and in particular to provide for determining a need to receive a wireless transmission from a transmitter that is presently within wireless communications range of the base site, automatically determining whether to selectively allocate a wireless relay resource intermediate between the base site and the transmitter to thereby at least attempt to increase a quality of service to support the wireless transmission from the transmitter, wherein the wireless relay resource comprises a demodulation processing relay resource, and providing an instruction to the wireless relay resource to cause the wireless relay resource to relay at least portions of the wireless transmission from the transmitter, wherein the instruction comprises providing at least identifying information regarding the transmitter. The applicants contend that claim 1, as amended, is not taught by any of Schmutz, Durrant, or Nakatsugawa, individually or in combination.

Schmutz merely teaches a low cost communication system wherein repeaters, instead of base sites, provide coverage to low density cells. That is, since a repeater is far less expensive than a base transceiver station (BTS), Schmutz teaches use of a repeater to provide wireless service in a low density cell instead of a BTS. The repeater then forwards wireless communications from mobile stations (MSs) residing in the cell to a "home" BTS and further forwards wireless communications from the BTS to the MSs residing in the cell. The low density cell, and MSs residing in the cell, is serviced by the repeater. Nowhere does Schmutz teach any automatically determining, by the BTS, whether to selectively allocate a repeater, let alone determining whether to selectively allocate a repeater to thereby at least attempt to increase a quality of service to support the wireless transmission from an MS that is presently within wireless communications wireless range of the BTS. That is, a repeater replaces a BTS in the low density cell and services all MSs residing in the cell; there is no automatic determination, by the BTS, whether to selectively allocate a repeater. Nor does Schmutz teach a providing, by the BTS, an instruction to the repeater to cause the repeater to relay at least portions of the wireless transmission from the MS. That is, the repeater relays all communications to and from all MSs residing in the repeater's coverage area; the BTS does not provide an instruction to the repeater to cause the repeater to relay at least portions of the wireless transmission from the MS. All Schmutz teaches is that the BTS may merely allocate frequencies that the repeater may use. While the frequency allocation assists the repeater in relaying a wireless transmission, it does not cause the repeater to relay wireless transmissions.

Durrant teaches a method to activate a repeater if a signal received from an MS is above a particular threshold. Thus Durrant teaches a self-determining, by a repeater, whether to activate. By contrast, claim 1 teaches determining, by a base site, whether to selectively allocate a repeater and providing, by the base site, an instruction to the repeater to cause the repeater to relay at least portions of the wireless transmission from the MS. Furthermore, any signal thresholding by a repeater, as in Durrant, is only indicative of signal quality between the MS and the repeater. Since the threshold operation is at the repeater and not the base site, quality of service cannot be improved when the base site is closer to an MS than the repeater and/or in various other scenarios,

such as a lower shadowing to the base site than the relay, etc. This is true even if the threshold is exceeded at the repeater. Moreover, in Durrant, because all transmissions of the users that exceed the threshold are relayed, which is independent of the threshold value or whether the threshold value can be dynamically controlled, the threshold at the repeater is not selectively repeating a particular user transmission, in contrast to the features of claim 1.

Nakatsugawa teaches a parallel, WLAN communication structure, not the serial communication structure described in the features of claim 1. That is, Nakatsugawa teaches multiple parallel repeaters. Each repeater of the multiple parallel repeaters measures a signal received by the repeater from an MS and reports the signal measurements to a 'master repeater' of the multiple parallel repeaters. The master repeater is selected on a case-by-case basis. The master repeater then selects an optimum repeater to service the MS based on the signal conditions reported by each repeater. The optimum repeater then processes signals received from the MS. While these multiple repeaters may have a single coupling to a network, for example, via one of the repeaters, the repeaters are functionally parallel. By contrast, the base site and a wireless relay resource described in claim 1 have a hierarchical structure, wherein the base site selects and instructs a wireless relay resource intermediate between the base site and the transmitter to perform relay functionality and the base site (as is known in the art) further performs signal processing not performed by the wireless relay resource.

Furthermore, in Nakatsugawa, due to its parallel design, the MS must be informed of the address of the assigned repeater as the MS will be communicating with the assigned repeater and not with the selector (the master repeater, unless the master repeater selects itself). The MS then negotiates a communication with the assigned repeater. By contrast, the teachings of claim 1 do not require a notification of the MS of the assigned wireless relay resource. Instead, the base site selects a wireless relay resource and then instructs the wireless resource to relay transmissions from an MS. All of this may be transparent to the MS, which merely knows that it is in communication with the base site. Thus, claim 1 teaches that the access network endpoint intended by the MS, that is, the base site, may select and instruct an intermediate element, that is, the wireless relay

resource, to participate in a communication session, which selection and participation may be unbeknownst to the MS and over which the MS may exercise no control. Meanwhile the MS continues to believe it is communicating with, intend its communications for, and conveys its communications to, the base site. By contrast, Nakatsugawa, due to the parallel nature of the system, teaches a selection of an access network endpoint to the air interface, an informing of the MS of the endpoint, a negotiation between the MS and the selected endpoint, and a bypassing, in effect, of the selector of the endpoint unless the selector selects itself.

Therefore, none of Schmutz, Durrant, or Nakatsugawa, individually or in combination, teaches the features of claim 1 of automatically determining, at a base site, whether to selectively allocate a wireless relay resource intermediate between the base site and the transmitter to thereby at least attempt to increase a quality of service to support the wireless transmission from the transmitter, wherein the wireless relay resource comprises a demodulation processing relay resource, and providing, at the base site, an instruction to the wireless relay resource to cause the wireless relay resource to relay at least portions of the wireless transmission from the transmitter, wherein the instruction comprises providing at least identifying information regarding the transmitter. Accordingly, the applicants respectfully request that claim 1 may now be passed to allowance.

Since claims 2-40 depend upon allowable claim 1, the applicants respectfully request that claims 2-40 may now be passed to allowance.

Claim 41 has been amended to provide a communications controller configured to operate at a base site and including a wireless transmitter and receiver, a resource allocator that is operably coupled to the wireless transmitter and receiver and that is responsive to a wirelessly transmitted signal from a remote unit that is within wireless reception range of the receiver requesting allocation of a communication resource to facilitate transmission of information to the receiver, and a relay resource activator that is operably coupled to the resource allocator, such that a wireless relay resource intermediate between the base site and the transmitter and having a demodulation processing relay resource can be selectively activated by the communications controller to

improve quality of service for a wireless transmission from the remote unit when transmitting within wireless reception range of the receiver and provides an instruction to the relay resource to cause the relay resource to relay at least portion of the wireless transmission from the remote unit, wherein the instruction comprises providing at least identifying information regarding the remote unit. As described in detail above, none of none of Schmutz, Durrant, or Nakatsugawa, individually or in combination, teaches such a communications controller.

Accordingly, the applicants respectfully request that claim 41 may now be passed to allowance.

Since claims 42-45 depend upon allowable claim 41, the applicants respectfully request that claims 42-45 may now be passed to allowance.

As the applicants have overcome all substantive rejections and objections given by the Examiner and have complied with all requests properly presented by the Examiner, the applicants contend that this Amendment, with the above discussion, overcomes the Examiner's objections to and rejections of the pending claims. Therefore, the applicants respectfully solicit allowance of the application. If the Examiner is of the opinion that any issues regarding the status of the claims remain after this response, the Examiner is invited to contact the undersigned representative to expedite resolution of the matter.

Respectfully submitted,
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By: _____

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